

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

North Star Steel Of IA

Iowa Manufacturing Extension Partnership

North Star Steel Wins Department Of Energy Implementation Grant

Client Profile:

North Star Steel is a steel mini-mill manufacturer. Located in Wilton, Iowa, the company employs less than 500 people.

Situation:

North Star Steel needed to reduce its energy costs. The company contacted the Iowa Manufacturing Extension Partnership (IMEP), a NIST MEP network affiliate, for help conducting a plant-wide assessment of its operations with a goal of improving productivity, reducing waste, and enhancing global competitiveness.

Solution:

IMEP and its partners--the Center for Industrial Research and Service (CIRAS), Iowa Energy Center, and Enterprise Mid-America--began the process of helping North Star Steel apply for and win a U.S. Department of Energy (DoE) grant to conduct the study. As a first step, North Star Steel created a study team with representatives from CIRAS, the steel industry, and company employees. The team conducted a Total Assessment Audit, or TAA (an integrated energy, waste, and productivity audit developed by the Iowa Energy Center and deployed by IMEP), at North Star Steel. The TAA identified potential savings opportunities in five specific operational areas: 1) Electric Arc Furnace dust reduction and dust recycling alternatives; 2) electric motor energy efficiency; 3) melt and reheat furnace processes; 4) heat recovery alternatives; and 5) energy management planning. The TAA findings and data were used to support the DoE grant application.

The DoE study team members assessed the probability of helping North Star Steel achieve its efficiency goal of 10 percent energy reduction and 30 percent waste reduction by 2005. Since the launch of this initiative, the team has identified significant potential savings (over \$2 million annually). The final report was submitted to the DoE in 2003. North Star Steel won a \$78,900 grant from DoE to implement the energy saving projects identified in its report. As of September 2003, three of the 13 projects have been implemented and have demonstrated an energy savings of \$198,705 for the preceding six months, translating to an annual savings of \$397,410.

Results:

Identified 13 projects with a potential annual savings of \$2,639,960.

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Won a \$79,000 implementation grant from the U.S. Department of Energy.
Implemented three projects to yield an annual energy savings of \$400,000.

Testimonial:

"We are pleased to be recognized by the U.S. government for our continuing efforts to manufacture quality steel products in a manner that is more efficient, cost-effective, and environmentally sound. The grant [the Iowa Manufacturing Extension Partnership and its partners helped us secure] enabled North Star Steel to focus on key manufacturing areas where efficiency improvements could be realized, and helped develop best practices that other industries nationwide could adopt."

Carl Czarnik, General Manager